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ABSTRACT

The classroom behavior of 148 hearing impaired children (7-13 years old) was rated by their teachers on the School Behavior Check List. Behavioral descriptions were analyzed in terms of whether or not the student was reproted to have an emotional/behavioral problem or other educationally significant handicapping conditions, and the student's sex and age. Analysis of covariance indicated that the effects of emotional/behavioral problems and the effects of other handicapping conditions on classroom behavior were independent and additive, and that some sex differences were significant, but that age had little effect. Hearing impaired Ss reported to be emotionally/behaviorally disturbed showed significantly lower need for achievement, greater aggressiveness, more anxiety, and greater hostile isolation. (CL)

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THE CLASSROOM BEHAVIOR OF EMOTIONALLY DISTURBED HEARING IMPAIRED CHILDREN

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ABSTRACT

The classroom teachers of 148 hearing impaired children described the classroom behavior of their students by means of the School Behavior Check List. These behavioral descriptions were analyzed in terms of whether or not the student was reported to have an emotional/behavioral problem, whether or not the student was reported to have other educationally significant handicapping conditions, the sex of the student, and the student's age (in the range from 7 to 13). Analysis of covariance indicated that the effects of emotional/behavioral problems and the effects of other handicapping conditions on classroom behavior were independent and additive, and that some sex differences were significant, but that age within the given range had little effect. The results demonstrate the behavioral validity of reports of handicapping conditions made to the Annual Survey of Hearing Impaired Children and Youth. Item analysis provides additional clinical descriptions of the behavioral variations among hearing impaired children, as well as of some overall behavioral differences between hearing impaired and normally hearing children. A review of related literature and some suggestions for follow-up research are also included.

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A copy of the complete dissertation (135 pages) can be obtained from the Office of Demographic Studies upon remittance of $10.00 to cover the cost of photocopying and mailing.

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THE CLASSROOM BEHAVIOR OF EMOTIONALLY DISTURBED HEARING IMPAIRED CHILDREN

The need for accurate identification and appropriate description of emotionally/behaviorally disturbed hearing impaired children has long been of concern to educational specialists and mental health professionals (Lyon, 1934; Springer, 1938; Myklebust, 1945; Bindon, 1957; Vernon, 1967). However, only recently have systematic attempts been made to estimate the prevalence of this problem and to design appropriate intervention programs.

The diagnostic situation is complicated by the fact that the major etiologies of deafness, i.e., heredity, maternal rubella, prematurity, and Rh incompatibility, are frequently associated with neurological defects, which can form the basis for later emotional and behavioral disturbances. Vernon (1969), in his study of multiply handicapped deaf children, demonstrated that diseases such as rubella often result in the child being restless, hyperactive, distractible, impulsive, and somewhat unstable. To compound the problem, one out of every four hearing impaired children in special education programs has one or more educationally significant handicapping conditions other than emotional/behavioral disturbances, e.g., visual impairments, serious heart disorders, orthopedic handicaps, cerebral palsy, etc. (Gentile & McCarthy, 1973).

The interrelationship of organic brain pathology, sensory deprivation, and other handicapping conditions cannot but lead to greater degrees of stress for the growing child, increasing the possibility for the development of emotional and/or behavioral problems. This observation is supported by Jensema & Trybus (1975), whose data indicate that the more additional handicapping conditions the deaf child has, the more likely he/she is to exhibit emotional/behavioral problems. On the other hand, physical handicaps can so dominate an examiner's perception of a child that the emotional/behavioral disturbances become more difficult to observe and can go undiagnosed.

For the more than 90% of all hearing impaired children who have hearing parents, accurate description of emotional/behavioral problems may be hindered at the outset. These parents, who usually have had little or no previous experience with deafness, the problems resulting from deafness, or the methods required to communicate with deaf people, often are overwhelmed by the introduction of deafness into their family system. Thus, further distinction between appropriate and disturbed behavior is more than can be expected. This is a significant factor attested to by data from the Office of Demographic Studies, reported by Stokoe and Battison (1975), which indicate that the prevalence of emotional/behavioral disturbance among deaf

children is nearly twice as high among children with hearing parents as among those who have deaf parents. The purpose of this study, then, was to obtain descriptions of the actual classroom behavior of hearing impaired children between the ages of 7 and 13. The effects of being labeled "emotionally/behaviorally disturbed" were examined, as well as the effects of other handicapping conditions on classroom behavior. Finally, the study examined the effects of age and sex on the descriptions of the classroom behavior of hearing impaired children.

Review of the Related Literature

Prevalence

National data on hearing impaired children in special education programs indicate that 9% of such children have been identified as emotionally and/or behaviorally disturbed to an educationally significant degree, that is, to such an extent that the emotional or behavioral problem significantly adds to the difficulty or complexity of educating the hearing impaired child (Jensema & Trybus, 1975).

Vernon (1969) made an intensive study of the leading etiologies of deafness and of the secondary disabilities associated with deafness, i.e., expressive and receptive communication disorders, mental deficiency, markedly atypical behavior, and learning disabilities. His subjects were 1,468 deaf children who had attended or were administered preadmission evaluations at the California School for the Deaf, Riverside, from 1953-1964.

The leading etiologies identified were: maternal rubella (141 cases), meningitis (137 cases), prematurity (257 cases), erythroblastosis fetalis (45 cases), and heredity (79 cases). Vernon's (1969) study concluded that behavioral variance among deaf children was not due to their hearing loss, but was best understood in relationship to the etiology of their deafness. Furthermore, the areas most affected were academic learning, psychological adjustment, and physical health. Vernon also indicates that the rise in the prevalence of multiply handicapped deaf children and types of etiologies associated with this increase may contribute to future learning and behavior problems within the deaf multiply handicapped population. Vernon used three types of measures in assessing the psychological adjustment of his subjects. First, teachers or supervising teachers rated the children's psychological adjustment on a five-point scale; second, the number of students dismissed for emotional disturbances was recorded for each of his etiological groups; and third, he used available psychological evaluations for the students who were classified as severely disturbed. Teacher evaluations indicated that 20.7% of the students had a poor psychological adjustment. This figure is very close to the proportion of students whose

psychological test evaluations indicated that they were emotionally disturbed (22.5%). The group that was dropped from school because of emotional disturbance represented 9.0% of the population.

The Schlesinger and Meadow (1972) study was designed to identify those children at a state residential school who were considered by their teachers or dormitory counselors to be severely emotionally disturbed and in need of psychiatric treatment and/or children who were not severely disturbed but whose behavior required special time and attention from classroom teachers.

The questionnaire form used in the study was adopted from a mental health survey of all children in Los Angeles County, California. Of a total of 516 students, 60 were identified as severely disturbed (11.6%); 101 students (19.6%) were assessed as having problems of a lesser degree. When compared with the children in the Los Angeles County study, almost four times as many deaf students were identified as severely disturbed, and over two and one-half times as many deaf as hearing students were identified as mildly disturbed. The study made further analysis of 12 demographic variables and reported no significant relationship between mental health status and race or ethnicity, father's occupation, parents' hearing status, or degree of residual hearing. Significant differences were found in the areas of sex, I.Q. scores, ordinal position, and etiology of deafness. Etiology was a significant factor in that disturbed children have had a higher rate of unknown etiology. However, I.Q. scores were lower among the disturbed group, and girls and first-born children were more frequently represented in the disturbed group.

A British study conducted on the Isle of Wight surveyed the handicapping conditions of all children living on the Isle between the ages of five and fourteen (11,685). It is interesting to observe that in this study the rate of psychiatric disorders ranged from 6.6% for the general population of non-handicapped children to a high of 58.3% for children who had signs of brain disorders. This finding adds significance to Vernon's (1969) study, which focused on the etiologies of deafness and their relationship to secondary handicaps prevalent in deaf children.

Freeman, Malkin, and Hastings (1975) studied all deaf children, ages five to fifteen (120) in the greater Vancouver area. The identification of children with behavioral problems was done by combining the judgments of parents, of teachers, and of medical records. The findings of this study indicated that 22.6% of the Vancouver deaf children were judged as having a severe to moderate psychiatric disorder.

Assessment

Vernon & Brown (1964) indicate that personality evaluation is far more complex than I.Q. testing, especially with deaf children. The major difficulty seems to be the communication problems inherent in severe hearing loss which make the use of certain personality tests more difficult. The four personality tests recommended for use with hearing impaired are the Draw-a-Person, Thematic Apperception Test, Rorschach Ink Blot Test, and the House, Tree, Person Technique (Vernon & Brown, 1964).

Myklebust (1960) indicates that studies of the personality adjustment of children deaf from an early age present difficult diagnostic problems, the basic problem being the inadequacy of techniques and instruments for the accurate assessment of personality. Since projective tests and reliable personality tests rely on the verbal facility of subjects, the evaluation of the deaf child has been extremely inadequate.

Springer & Roslow (1938) used the Brown Personality Inventory to study the emotional stability of deaf children. The groups were matched in intelligence and socio-economic status. They found psychoneurotic tendencies to be much higher in the hearing impaired. Springer (1938) also used the Haggarty-Wicherman-Olson Behavior Rating Schedules in a study of 377 deaf children compared to 415 hearing children. His findings indicated that the deaf children had more problem tendencies than the hearing children.

Using the same technique, Myklebust & Burchard (1945) studied 187 children in a residential school. Their findings supported the work of Springer in that deaf subjects presented a higher incidence of behavior problems. Lyon (1934) studied the emotional maturity of deaf youth. His population included 87 males and females, with an average age of 19 years, who were attending a residential school for the deaf. He used the Thurstone Personality Schedule and found that there appeared to be twice as many deaf as hearing children who were poorly adjusted.

Myklebust (1960) did an extensive study on the relationship between impaired hearing and emotional adjustment using the Minnesota Multiphasic Personality Inventory (MMPI). The analysis showed that deaf males differed significantly from hearing males on all the 10 scales.

Myklebust (1960) studied the influence of profound deafness on the emotional development of children. Using the Drawing of the Human Figure Test, he compared 511 residential school deaf children, 319 day school children, and 274 hearing children. The results showed alteration of perceptual processes and awareness with profound deafness. The deaf child had characteristic perceptual distortions regarding himself and presumably projected these in his perception of others.

While the above studies continue to report that deaf children and adults in general demonstrate higher abnormal test results, clear descriptions of what behaviors children and youth demonstrate is lacking.

Rimland (1971) studied 445 children with developmental disorders who were placed in eight diagnostic categories: autism, infantile autism, childhood schizophrenia, emotional disturbance, neurological damage, retardation, psychosis, and deafness. Each of the children was diagnosed twice but with conflicting results. In the first examination, 16 children were diagnosed as psychotic by two doctors. To compound the issue, 12 children were diagnosed as deaf in their first examination, and 13 children in the second evaluation, but they were 25 different children; not one child in 445 was diagnosed as deaf by both specialists. Stokoe & Battison (1975) propose a new dimension to the difficult process of assessment by focusing on the relationship between deafness, language, and mental health. They point out that behavior is directly related to a person's understanding of society's standards for behavior and that standards are communicated by that society's language. The deaf individual may be at a disadvantage, given the fact that he must decode the behavior system without a similar language process, i.e., hearing the speaking; and the deaf person may be regarded as crazy, stupid, evil, etc., because he does not respond as hearing people do in certain circumstances.

In view of the communication difficulties encountered in personality assessment of hearing impaired children, it seems understandable that agreement as to the prevalence and type of behavior problems encountered in hearing impaired children is still a complex task with no easy solution.

Behavioral Description

While there is at least some understanding of special factors that operate to produce emotionally/behaviorally disturbed hearing impaired children, little description of the actual behavior of disturbed hearing impaired children appears in the literature.

Historically the public school has been considered the agency that can best provide an accurate description of its pupils (Bower, 1969; Hewett, 1968). The school provides professional personnel trained in child development, and teachers have direct contact over extended periods of time with students in a variety of situations. Berkowitz & Rothman (1961) stress the importance of early identification and description of the emotionally disturbed child and characterize the classroom teacher as the person best able to identify the child who is disturbed. Keogh (1972) points out the need for early identification of disturbed children and stresses the limitations of standardized tests in the assessment of children who are manifesting behavioral problems.

Research in the area of early identification and description of emotionally handicapped children began with Olson's study (1930), in which 1,537 children were rated on a behavioral problem scale. Ullman (1952), in his study of ninth-grade students, found a high correlation between the judgment of teachers and clinicians on the behavioral maladjustment of students. Bower (1969) indicates that past research in the early identification and description of emotionally handicapped children tends to point in the direction of teacher-collected information as a reliable and relevant source of appraisal.

Reporting of emotional/behavioral disturbances has been a regular item on the Annual Survey of Hearing Impaired Children and Youth. However, this rating has not been based on the use of any particular index to measure the validity of the observations. Two other studies in the area of deafness have used instrumentation to rate hearing impaired children. Hicks (1970), in a study of deaf children in Texas, refers to a psychosocial instrument developed by Stricklin. This instrument was not widely used and its validity and reliability remain in question.

Schlesinger and Meadow (1972) conducted a survey of the California School for the Deaf in which they used a questionnaire to identify the incidence of behavioral problems in a population of deaf school children.

While the behavioral assessment of hearing impaired children is still a new field, those researchers involved in this area have followed the general pattern of other researchers in depending upon teacher-collected data. The present study focused in behavioral comparisons among hearing impaired children and used a refined behavioral instrument for the collection of data.

The instrument used in this study was the School Behavior Check List (SBCL). The SBCL covers a wide range of social and emotional behaviors from moderate social deviance indicative of psycho-pathological disorders of childhood to social competence. The inventory was developed through a series of studies, with the original list of items taken from the Pittsburgh Adjustment Survey Scales (Ross, Lacey, and Parton, 1965) and from the Louisville Behavior Check List (LBCL) (Miller, 1967a; Miller, 1967b).

The instrument has seven scales: Low Need Achievement (LNA), Aggression (AGG), Anxiety (ANX), Academic Disability (AD), Hostile Isolation (HI), Extraversion (EXT), and Total Disability (TD). The 96 items used in this study constitute Form A2 of the SBCL for ages 7-13. The extensive use of this instrument, its validity, and reliability make it an appropriate tool for this study.

Service Programs for Multiply Handicapped Hearing Impaired Children

The need for educational programs for deaf children with additionally handicapping conditions has long been a concern of educators of the deaf. Schein (1974) reports that, between the years of 1879 and 1899, four articles appeared in the American Annals of the Deaf calling attention to this particular need. However, it was not until 1968-1969 that the need for special programs became a critical issue as large numbers of multi-handicapped children began entering schools for the deaf. This increase in multi-handicapped children was largely due to the rubella epidemic of 1963-1965.

Lennan (1974) reported that over the past 25 years the population in educational programs for the hearing impaired has greatly changed. Twenty-five years ago, a large percentage of hearing impaired children were postlingually deafened by childhood illnesses such as measles, mumps, whooping cough, and otitis media. Today, 90% or more of the children enrolled in special education classes for the hearing impaired were congenitally or prelingually deafened.

Currently the leading etiologies of deafness are maternal rubella, prematurity, heredity, and Rh incompatibility; of these etiologies, maternal rubella, prematurity, and Rh incompatibility are generally associated with multiple handicaps among hearing impaired children. Vernon (1967) reports that maternal rubella is the leading cause of deafness. He further describes the sequelae associated with this etiology as producing audiograms that are relatively flat or asymetrically curved, with the highest points at the extremes of the audiogram. Behaviorally, these children are reported as being restless and somewhat unstable -- traits often attributed to brain damaged children.

Anderson & Stevens (1970) indicate in their study that in recent years there has been increasing concern for the relatively large number of children who have one or more handicapping conditions, in addition to hearing loss, which tend to interfere with adjustment to school. Administrators of residential schools for the deaf have expressed concern over the apparent increase of children with multiple disabilities. More significantly, there is a growing recognition of the need for changes and development in educational practices that will expedite more effective education and training. Doctor & Davis (1972), in their study of the rubella epidemic, 1964-1965, point out the educational and social problems encountered by educators of the deaf as they try to cope with an increased population of post-rubella deaf children. Doctor & Davis further indicate that rubella children are generally hyperactive and have a shorter attention span than the average deaf child. Hicks (1970) reports that the post-rubella deaf child requires more freedom and mobility within the classroom than do other deaf children. He also indicates there is a strong tendency toward distractibility in these children such that, when formal lessons are attempted, there appears a need for greater structure than with the non-rubella deaf child.

Jensema (1975), in a study of the achievement test scores of 4,031 multiply handicapped hearing impaired children, found that the presence of an additional handicap has a negative influence on academic achievement. But more importantly, the study indicates that different types of additional handicaps exert different degrees of influence on the learning process. This fact has further educational implications when paired with emotional/ behavioral disturbance.

Hehir (1974), in his report of New York State's programs for multiply handicapped deaf children, reports that there are an estimated 857 multiply handicapped deaf children in nine special schools for the deaf. The major task facing the New York educational system is preparing adequately qualified teachers for this population, Hehir concluded. At the time of his writing, no such program was in existence. Schein (1974) points out that, according to data published in 1972, the prevalence rate of children believed to have a handicap secondary to deafness is 400 per 1,000 children. However, the lack of services being provided these children is significant when only 148 per 1,000 are in specialized programs. Thus, more than one-third of those rated as having an educationally significant handicapping condition are in special programs. Those programs most lacking are programs for emotionally disturbed children. It is also noted that only 67% of the children identified as deaf and mentally retarded are in special classes.

Stewart (1974), in reporting his findings of a five year research and demonstration project designed to evaluate the feasibility of a program for multiply handicapped deaf adults, cites three major problems in the population studied: communication problems, behavior problems, and motivation problems. In the area of behavior problems, terms such as inappropriate, inadequate, and impulsive were used to describe the behavior of a majority of the 106 subjects in the study. A reported 17 of the 106 were given disciplinary discharges, and 29 either dropped out or were withdrawn because of poor progress in training. Behavioral problems of the subjects included temper outbursts, fighting with students and staff, intoxication, refusal to obey orders of staff members, social naiveté, and unruliness. A major recommendation for this research project suggested that elementary, secondary, and post-secondary educational and rehabilitative programs adopt new and more constructive approaches in dealing with behavioral problems of the multiply handicapped student.

Schein (1974), in summarizing the rehabilitation of severely handicapped deaf people, notes that, while estimates of the prevalence of multiply handicapped deaf children and adults vary, the need for adequate education and rehabilitation of this population is a real factor. He further emphasized that the politics of numbers should not dictate services being provided, but these services should be provided because they are needed.

Services to Emotionally Disturbed Hearing Impaired Children

The first author, in order to further define the emotional/behavioral problems of the hearing impaired population, conducted a national survey of psychiatric facilities serving the deaf. This survey, conducted in the spring of 1976, involved first compiling a list of all known state and federal mental health facilities that provide mental health services for hearing impaired persons.

It was reported that 727 deaf persons were currently being served by 15 mental health programs for the deaf. Table 1 describes the size of the mental health programs' patient population in the 15 facilities surveyed, their location, and the years in which they were established.

TABLE - 1

Size of Mental Health Programs' Patient Population, Location, and Year of Establishment

Inpatients Only		Outpatients Only	
Dixmont State (Pa., 1972)	20	Langley Porter (Calif., 1968)	24
Mendota State (Wisc., 1973)	13	Minnesota Public Welfare (Minn., 1973)	15
Western State (Va., 1973)	24		
Broughton State (N.C., 1973)	30		
Central State (Ind., 1973)	40		
	127		39

Combined	Inpatients	Outpatients
Rockland (N.Y., 1963)	30	270
St. Elizabeths (D.C., 1963)	46	50
Michael Reese (Ill., 1968)	3	20
Austin State (Tex., 1969)	36	10
Resthaven (Calif., 1973)	5	12
Columbus State (Ohio, 1974)	24	1
Fort Logan (Colo., 1975)	10	9
St. Paul Ramsey (Minn., 1975)	5	30
	159	402
SUB-TOTAL	286	441
TOTAL	727	

The staffing pattern for the 15 mental health programs is of interest in that a total of 68 full-time professional staff members were reported. Eight of these were reported as being deaf. A total of 129 nursing staff was reported in a separate category; only one was reported as being deaf.

Taking into account the reported census of the hearing impaired population (Schein & Delk, 1974) and using the National Institute of Mental Health's estimates of the mental health needs of the general population when figured at 1%, 2%, and 10%, the need for mental health services among deaf people is illustrated by Table 2.

TABLE - 2

Need for Mental Health Services Among Deaf People

Degree of Hearing Loss	Total Number	Number Needing Services		
		1%	2%	10%
Hearing Impaired	13,975,000	139,750	279,500	1,397,500
Significant Bilateral Loss	6,850,000	68,500	137,000	685,000
Deaf	1,850,000	18,500	37,000	185,000
Prevocationally Deaf	430,000	4,300	8,600	43,000

The author, in conjunction with Edelstein (1976), surveyed more than 80 educational institutions in 28 states, identifying through various published and informed sources facilities offering special psycho-educational services to emotionally disturbed, deaf children. Eleven programs were reported as having self-contained units within the school for the deaf serving the dual problems of deafness and emotional disturbance. Children in these programs were of normal intelligence but were referred to the special unit because their ability to function in class was limited by emotional/behavioral problems. A total of 215 children were reported as being served in the 11 programs. Services were provided by 185 professional staff members, more than half of whom were employed on a part-time or consulting basis. Thus, of the 3,457 deaf children reported as having emotional/behavioral problems on the Annual Survey of Hearing Impaired Children and Youth, only 215 were reported as receiving special help in a unit designed for emotionally/behaviorally disturbed children.

Method

Design of the Study

The four variables to be studied are: (1) the presence or absence of a reported emotional/behavioral disturbance; (2) the presence or absence of a reported additional handicapping condition; (3) sex; and (4) the age of the student. The age of the students will range from 7-13 years, which is the age range for Form A2 of the SBCL; age will serve as a covariate. Thus, the design may be characterized as a three-way factorial design: 2x2x2, with age covaried.

Subjects

The subjects for this study were 150 hearing impaired male and female students, ages 7-13 at the time of data collection. Appropriate age for the subjects was defined as having a birthdate occurring during the calendar years 1962-1968 inclusive. The subjects were selected from three residential schools for the deaf. The three schools were: the American School for the Deaf, Hartford, Connecticut; the Katzenbach School for the Deaf, Trenton, New Jersey; and the North Carolina State School for the Deaf, Morganton, North Carolina.

These schools were selected because they were geographically easily accessible, and had participated in the Annual Survey of Hearing Impaired Children and Youth (1974-1975), so that a file of demographic and other information on the students was available.

Assignments of Subjects to Groups

Subjects were assigned to one of four groups, as follows:

1. All subjects who were reported on the Annual Survey of Hearing Impaired Children and Youth (1974-1975) as having an emotional/behavioral problem as their only additional handicapping condition were selected for Group 1.

2. All subjects who were reported on the Annual Survey of Hearing Impaired Children and Youth (1974-1975) as having an emotional/behavioral problem plus one or more additional handicapping conditions were selected for Group 2.

3. In each of the three schools, a number of subjects, approximately equal to the number in Groups 1 and 2 combined, were randomly selected from all students having one or more additional handicapping conditions, excluding emotional/behavioral problems. This constituted Group 3.

4. In each of the three schools, a number of students, approximately equal to the number in Group 1 and 2 combined, were randomly selected from all students identified on the Annual Survey of Hearing Impaired Children and Youth (1974-1975) as having no additional handicapping conditions beyond the reported hearing loss. These subjects constituted Group 4.

Instrumentation

The instrument for this study was the SBCL, Form A2, which is composed of 96 items of deviant and prosocial behaviors. Miller (1975) describes the six factor scales and total disability scale as follows:

(1) Low Need Achievement (28 items) -- Low motivation, failure to master difficult tasks, and a defeatist attitude characterize these items.

(2) Aggression (36 items) -- This scale is made up of Ross's Aggressive and Passive-Aggressive factors which collapsed into one scale.

(3) Anxiety (18 items) -- This scale is similar to Ross's withdrawal factor with the addition of seven new anxiety items and the elimination of six Pittsburgh items.

(4) Academic Disability (8 items) -- This scale is composed entirely of items indicating poor academic skills and low intelligence.

(5) Hostile Isolation (7 items) -- The small number of items on this scale probably limits utility, but the scale is reported because the items closely approximate the well known "schizoid character" with its implied pathogenic prognosis.

(6) Extraversion (12 items) -- An egocentric, "pushy" extravert factor made up primarily of items loading high on social desirability.

(7) Total Disability (95 items) -- This scale is composed of each item (except #30) loading significantly on one of the six Pittsburgh factors.

Procedure

For each student selected for the study, a copy of the SBCL Form A2 was prepared by entering on it the Annual Survey I.D. number (in ink) and the student's name (in pencil). The information items on the first page of

the form were not requested, since the necessary student information was already on file. The forms for a given school were then sent to the superintendent with instructions to pass on each form to the actual classroom teacher of the named student. If the student had more than one teacher, the one who had most contact with the student was selected. The teachers completed the forms, erased the student names (leaving the I.D. numbers), and returned the forms to the superintendent, who forwarded them to the authors.

When all forms were received, they were scored and verified using the scoring templates and the scoring/profiling sheets provided by Miller. All the data, including responses to each individual item and the raw scores and scaled scores for each subscale, were then transferred to coding sheets (and verified) by trained and experienced statistical clerks. The coded data was then entered directly on the computer disc storage files by means of a key-to-disk system using online cathode ray tube (CRT) terminals. All information was entered twice by two independent operators. The results were then checked for consistency and any disagreements between the files were reconciled. The final results of the process constituted the SBCL data file.

Qualifications and Limitations of the Data

1. The subjects for this study were enrolled in residential schools for the deaf. Therefore, the results of this study may not necessarily be generalizable to hearing impaired children who attend school in other types of educational settings.

2. The subjects of this study were hearing impaired children, 7-13 years of age. Therefore, the results of this study may not be generalizable to children above or below this age range.

3. Since the behavior descriptions for the SBCL were done by classroom teachers, the results of the descriptions may not be generalizable to situations in which the descriptions are done by other professionals or by parents.

Results and Discussion

Completed SBCL forms were received for 148 subjects out of 150 selected for the study. This resulted in a return rate of 98.7%, thus insuring that the data were not biased because of non-respondents.

The major analysis of data consisted of a three-way analysis of covariance. Supplemental analysis included: the distribution of basic data variables, Chi-square tests on basic data variables and an item analysis of the seven SBCL scales.

Analysis of Covariance

The summary results of the analyses of covariance are presented in Table 3. The raw score means and standard deviations for the eight groups (2 sexes x 2 EBSTAT* conditions x 2 OTHERHC** conditions) are presented in Table 4. The analysis is simple and straightforward in its meaning: (1) there are no significant interactions among the three main variables; (2) each main variable has significant effects on three or more of the seven scales; (3) on none of the seven scales do all three main variables show significant effects simultaneously; and (4) only on the EXT scale are no significant effects of any main variable registered.

T A B L E - 3

Summary of Three-way ANCOVA Covarying Age
(Level of Significance of F)

Variables	LNA	AGG	ANX	AD	HI	EXT	TD
EBSTAT	.002	.001	.03	ns	.005	ns	.001
OTHERHC	ns	ns	.02	.001	.01	ns	ns
SEX	.04	.04	ns	ns	ns	ns	.05
EBSTAT x OTHERHC	ns	ns	ns	ns	ns	ns	ns
EBSTAT x SEX	ns	ns	ns	ns	ns	ns	ns
OTHERHC x SEX	ns	ns	ns	ns	ns	ns	ns
EBSTAT x OTHERHC x SEX	ns	ns	ns	ns	ns	ns	ns
SIGNIFICANCE OF COVARIATE (age)	ns	.035	ns	ns	ns	ns	.05

* EBSTAT = emotional/behavioral problem status, i.e., whether or not the child was reported to have an educationally significant emotional/behavioral problem.

**OTHERHC = other handicapping conditions status, i.e., whether or not the child was reported to have one or more educationally significant handicapping conditions beyond the hearing loss, other than an emotional/behavioral problem.

TABLE-4

Raw Score Means and Standard Deviations

	EBSTAT-YES				EBSTAT-NO				ALL GROUPS TOGETHER
	OTHERHC-----YES		OTHERHC-----NO		OTHERHC-----YES		OTHERHC-----NO		
	M	F	M	F	M	F	M	F	
N	11	5	22	13	25	22	22	28	148
LNA mean	16.27	13.40	11.91	11.31	10.00	7.55	10.32	7.07	10.11
s.d.	2.76	7.23	6.52	7.19	5.90	5.79	8.48	7.20	7.01
AGG mean	19.91	20.60	21.60	16.39	12.76	7.96	11.55	8.57	13.41
s.d.	11.89	12.22	9.33	9.62	10.48	7.59	11.94	9.30	10.95
ANX mean	5.64	7.20	3.91	4.85	3.84	5.14	3.64	3.32	4.25
s.d.	4.32	3.83	2.09	2.64	3.33	4.02	2.67	3.20	3.27
AD mean	6.55	4.80	4.50	4.00	5.36	5.05	3.96	3.21	4.52
s.d.	1.37	3.27	2.63	2.27	2.02	2.38	2.89	3.04	2.66
HI mean	2.00	2.60	1.27	1.31	1.32	1.00	1.09	0.57	1.18
s.d.	1.10	1.52	1.24	1.25	1.35	1.02	1.38	0.88	1.25
EXT mean	6.91	6.20	7.68	6.77	7.24	6.91	7.18	7.11	7.12
s.d.	2.66	3.03	1.96	2.13	1.69	2.29	1.82	2.22	2.08
TD mean	49.00	47.20	41.14	36.46	31.92	25.32	28.96	21.82	32.14
s.d.	11.99	24.33	17.37	17.48	15.07	15.44	23.16	17.14	19.16

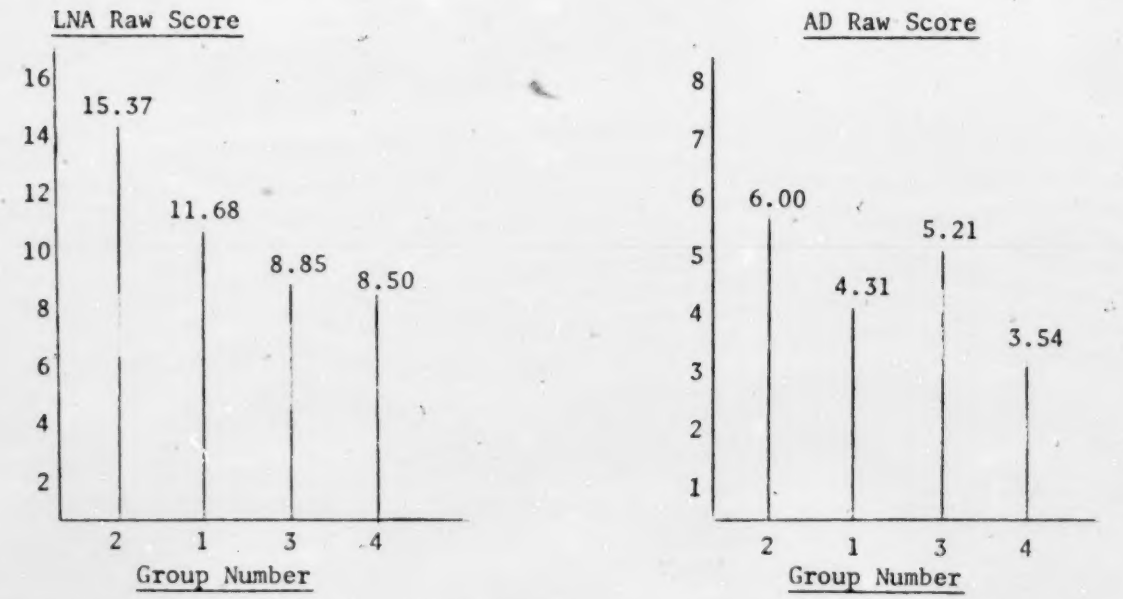
Visual presentations of the results of these analyses are displayed in Figures 1 and 2 for those situations in which significant main effects were observed. For simplicity's sake, the EBSTAT and OTHERHC variables were combined into a "group number" variable for the presentations in Figure 1: Group 1 = EBSTAT yes, OTHERHC no (EB problem only); Group 2 = EBSTAT yes, OTHERHC yes (EB problem plus other handicaps); Group 3 = EBSTAT no, OTHERHC yes (other handicaps only); and Group 4 = EBSTAT no, OTHERHC no (no additional handicaps). Since Group 2, EB problem plus other handicaps, was in general the highest scoring group, it is placed first on the displays in Figure 1. The additive effects of EBSTAT and OTHERHC are easily seen in these displays. Similar presentations are provided in Figure 2 for the three scales for which there was a significant effect related to the sex of the student. In all three cases, the higher, more pathological scores were obtained by males.

The Main Findings

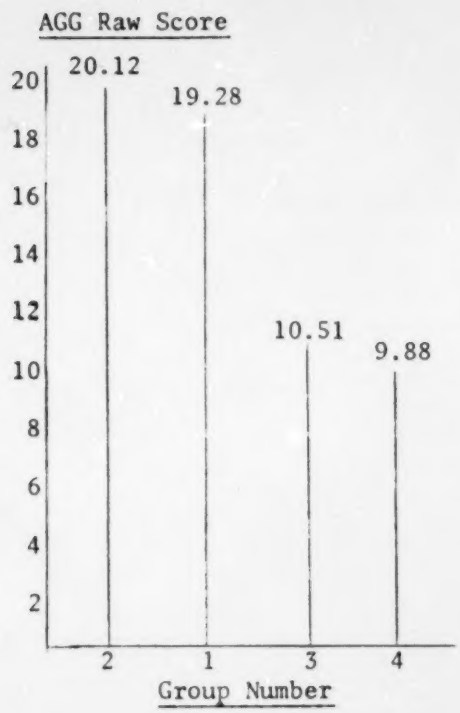
These are the main findings of this study: hearing impaired children reported to be emotionally/behaviorally disturbed show significantly lower need for achievement, greater aggressiveness, more anxiety, greater degrees of hostile isolation, and therefore, are overall more emotionally disabled than hearing impaired children who are not reported as disturbed. The "emotionally/behaviorally disturbed" label applied by the schools does, therefore, have significant, substantive meaning. The term is not randomly or inappropriately applied in general.

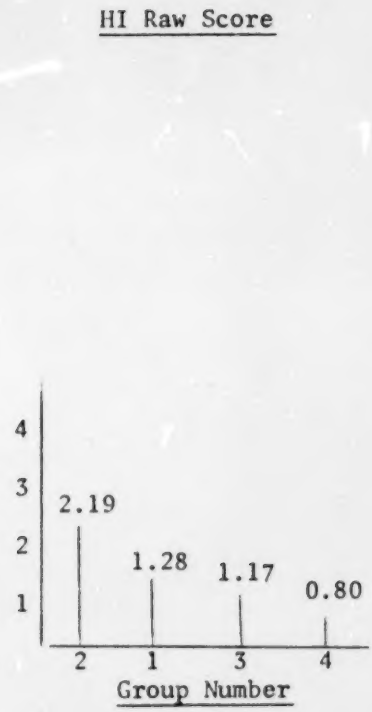
F I G U R E - 1

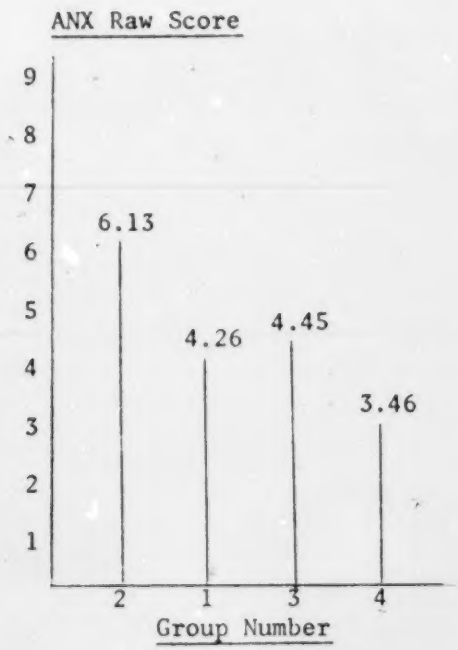
Group Differences on Six Scales

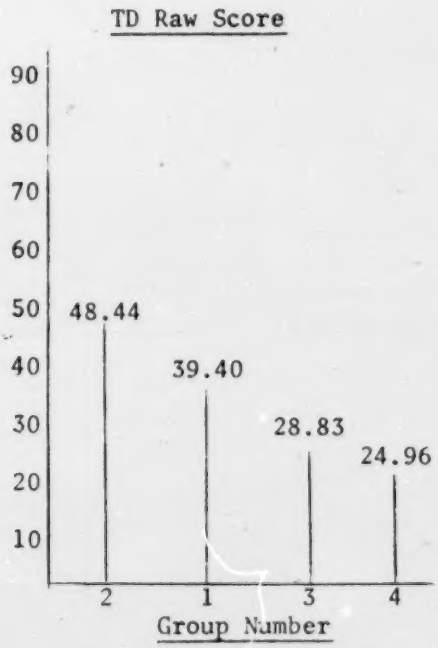


F I G U R E - 1 (Continued)



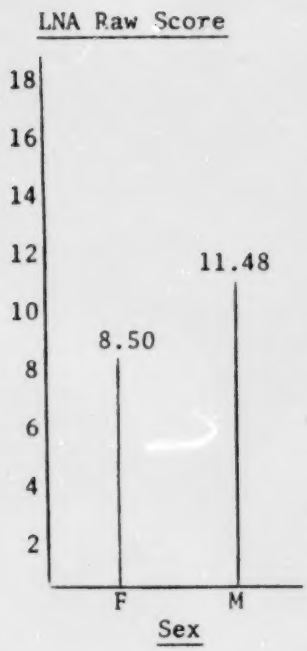


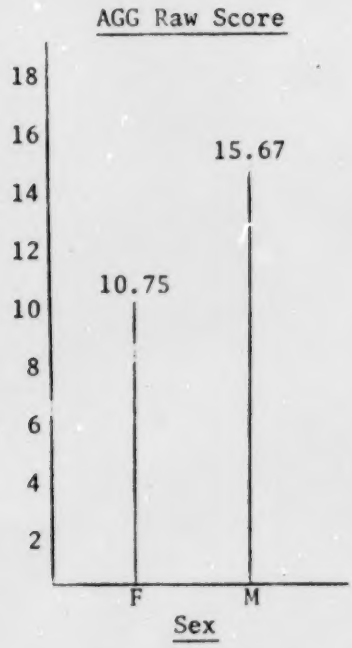


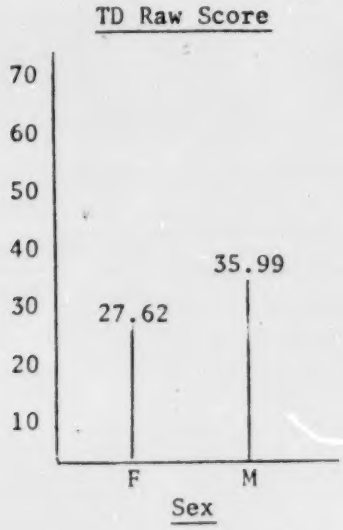


F I G U R E - 2

Sex Differences on Three Scales







The second main finding is that children who have additional handicapping conditions beyond their hearing loss are significantly more anxious, exhibit greater degrees of academic disability, and show more hostile isolation than do children who are without such additional handicapping conditions.

Boys show significantly lower need for achievement and significantly more aggressive behavior than girls and, as a result, receive significantly higher total disability ratings. The effects of age differences within this rather narrow range are small and inconsistent and therefore not statistically significant.

Although it is somewhat surprising not to find significant interactions among these three variables, the finding was quite clear and consistent. The effects of these three variables upon behavioral ratings by classroom teachers are, therefore, additive: boys will show more aggressive behavior than girls, whether or not they are considered disturbed; and disturbed children will show more aggressive behavior then non-disturbed children, regardless of sex. The greatest degree of aggressive behavior is seen in boys who are labeled disturbed, and the lowest degree of such behavior is seen in girls who are not considered disturbed -- and so on for the other scales.

Supplementary Analyses

A series of Chi-square tests were conducted among the four groups defined as above, in relation to certain other prominent characteristics of interest, to determine other dimensions of difference among the groups beyond their differences on the scales of the SBCL. The sex differences did not reach statistical significance ($x^2 = 4.53$, df = 3, $p > .05$, n.s.), but it is interesting to note that the sex ratio in Group 4 (no handicaps beyond the hearing loss) was 56% female, while the ratios in the EB groups were 37% and 31%, respectively, for Groups 1 and 2. Overall national figures show a distribution of 46% females in special education programs for the hearing impaired.

There were clear age differences ($x^2 = 43.49$, df = 21, $p < .005$) with children in the EB Groups 1 and 2 averaging a year younger than those in the non-EB groups. This is very unlikely to be a sampling error, given the nature of the sampling, and probably reflects a declining rate of disturbance with increasing age. This decline in itself is probably due to the transferring out of emotionally disturbed children over the course of time. Murphy & Trybus (1975) showed that children with multiple handicaps tend to leave special education programs for the deaf over the course of time.

There were no significant differences in the distribution of degrees of hearing loss among the four groups ($x^2 = 10.06$, df = 15, $p>.05$, n.s.). The majority of the children in each group is composed of those with severe and profound hearing losses, which is to be expected in state residential schools for the deaf.

Similarly, there were no differences in the age at onset of the hearing loss, with a large majority in all groups being deaf from birth ($x^2 = 22.82$, df = 21, $p>.05$, n.s.). Again, this reflects the general state of hearing loss in children, and particularly those children who are enrolled in state residential schools.

Table 5 presents the results of a series of Chi-square tests for the various causes of deafness which are commonly reported. Because multiple causes are reported for some children, it was not possible to construct a cause x groups test, and instead there had to be a series of tests, each reflecting "reported" or "not reported" status for each specific cause named. Significant differences occurred for three causes. Maternal rubella was a known cause for 49% of Group 1, but only for 22% of Group 4. Complications of pregnancy was a reported cause for 15% of Group 3, but accounted for only 3% or fewer of the children in the other groups. Finally, heredity was reported as a cause for 22% of the "no handicaps" group (Number 4), but only for 6% or fewer of the children in Groups 1 and 2. Again, these findings are in line with other studies, e.g., Vernon (1967) and Stokoe & Battison (1975).

Multiple Chi-square tests were also performed for the various ethnic groups, for the same reason as above, namely, the nature of the data which allows for multiple responses. All children in this study were either white, black, or Spanish-American; no other ethnic backgrounds were reported. The test results show no significant differences in distribution of ethnic classification of these children in the four study groups (white: $x^2 = 1.80$, df = 3, $p>.05$, n.s.; black: $x^2 = 1.12$, df = 3, $p>.05$, n.s.; Spanish-American: $x^2 = 0.89$, df = 3, $p>.05$, n.s.).

T A B L E - 5

Results of Chi-square Tests Among Groups by Causes of Deafness

Maternal Rubella	$x^2 = 8.66$	df =3	$p < .05$	
Pregnancy Complications	$x^2 = 9.52$	df = 3	$p < .05$	
Heredity	$x^2 = 10.09$	df = 3	$p < .05$	
Prematurity	$x^2 = 1.83$	df = 3	$p > .05$	n.s.
Rh Incompatibility	$x^2 = 3.37$	df = 3	$p > .05$	n.s.
Meningitis	$x^2 = 0.24$	df = 3	$p > .05$	n.s.
Birth Trauma	$x^2 = 6.43$	df = 3	$p > .05$	n.s.[a]
High Fever	$x^2 = 3.42$	df = 3	$p > .05$	n.s.
Cause Unknown	$x^2 = 3.54$	df = 3	$p > .05$	n.s.

[a] $p = .09$

Item Statistics

A final look at the data collected here is presented in Table 6, which provides various information item-by-item. The scored direction is indicated for each item, then the percent of each of the four groups for whom the item was in the scored direction is listed, then the value of Chi-square is given, and finally, the probability of receiving that Chi-square value by chance. Some items are scored on two different scales, with a "true" response scoring on one scale and a "false" response scoring on another. These items are marked by an asterisk (*) and one direction is chosen for display. Fifty-four items do show significantly different distributions among the four groups, while 42 items do not differ significantly. Examination of these item-by-item results helps to fill in the clinical picture of emotionally/behaviorally disturbed hearing impaired children as seen by their classroom teachers. In brief, the item data reflect much the same picture as that provided by the overall scores for the various subscales. Emotionally/behaviorally disturbed children are seen as much more aggressive, less academically motivated, and producing less adequate academic performance than their non-disturbed schoolmates. Whatever is true of disturbed children without other disabilities is even more strongly true of those who have other disabilities in addition to the emotional disturbance and the hearing loss. In a nutshell, to the teachers, "disturbed" means "disturbing" to the classroom situation and to orderly academic progress. Features such as depression, anxiety, isolation, and withdrawal are much less a part of the teacher's descriptions of the disturbed child, except in those situations where these characteristics intrude on the regular maintenance of the classroom atmosphere.

TABLE - 6

Item Statistics

	Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
1.	Is friendly	F*	15.2**	12.5**	8.5**	8.0**	1.38	ns
2.	Tends to give up if has something hard to finish	T	82.4	75.0	59.6	54.0	8.42	.04
3.	Interrupts whoever is speaking	T	65.7	68.8	44.7	38.0	9.12	.03
4.	Penmanship (handwriting) at least one grade level below age expectation	T	48.6	81.3	55.3	40.0	8.71	.03
5.	Starts fighting over nothing	T	57.1	62.5	25.5	18.0	21.20	.0001
6.	Is a helpful child	F*	25.7	25.0	10.6	14.0	4.30	ns
7.	Is alert in class	F*	50.0	53.3	38.3	38.0	2.26	ns
8.	Poorly coordinated when doing things with hands, such as coloring or pencil work	T	22.9	68.8	25.5	14.0	19.27	.0002
9.	Reading ability at least one grade level below age expectation	T	77.1	87.5	83.0	62.0	7.52	.057
10.	Just stands around on the playground	T	2.9	12.5	17.0	8.2	4.76	ns
11.	Acts up when adults not watching	T	68.6	62.5	23.4	32.0	21.71	.0001
12.	Volunteers to recite in class	F*	31.4	50.0	34.0	24.5	3.75	ns
13.	Hits and pushes other children	T	74.3	62.5	27.7	26.0	26.98	.00001

** Percent of individuals in the group for whom the item was answered in the scored direction shown.

TABLE - 6 (Continued)

Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
14. Hands shake or is nervous when called on to recite	T	17.1	0.0	17.0	14.0	3.21	ns
15. Finds fault with what other children do	T	68.6	62.5	42.6	42.0	8.13	.04
16. Approaches a difficult task with an air of defeatism	T	51.4	68.8	46.8	40.0	4.23	ns
17. Is considerate of others	F*	60.0	62.5	27.7	30.0	14.29	.003
18. Fails to carry out tasks (home-work assignments, seat work, etc.)	T	29.4	62.5	31.9	26.0	7.66	.054
19. Lacks ambition to do well in school	T	37.1	62.5	23.4	30.6	8.60	.035
20. Does things to get others angry	T	51.4	43.8	21.3	26.0	10.31	.016
21. Will put up an argument when told not to do something	T	54.3	62.5	29.8	26.0	12.44	.006
22. Does homework	F*	21.9	40.0	15.2	20.0	4.24	ns
23. Teases other children	T	77.1	62.5	36.2	28.0	23.77	.00001
24. Is afraid of making mistakes	T	54.3	62.5	34.0	44.0	5.49	ns
25. Is bossy with other children	T	60.0	56.3	29.8	22.0	16.33	.001
26. Is easily upset by changes	T	42.9	75.0	27.7	10.0	27.61	.00001
27. Is sure of self	F*	37.1	37.5	44.7	54.0	2.87	ns
28. Uses abusive language toward other children	T	48.6	37.5	15.2	14.0	17.20	.0006
29. Has changeable moods	T	88.6	81.3	57.4	38.0	25.26	.00001
30. Gives in when another child insists on doing something another way	T	40.0	37.5	59.6	53.0	4.30	ns

TABLE - 6 (Continued)

	Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
31.	Does not respect other people's belongings	T	40.0	50.0	19.1	18.0	10.81	.013
32.	Does not forget things which anger her/him	T	34.3	50.0	17.0	16.0	10.86	.013
33.	Seems to be off in own world	T	28.6	37.5	29.8	18.0	3.20	ns
34.	Is infuriated by any form of discipline	T	31.4	43.8	10.6	12.0	13.26	.004
35.	Likes an audience all the time	T	37.1	56.3	17.0	24.0	10.89	.012
36.	Finds it hard to study	T	68.6	75.0	47.8	40.0	10.40	.015
37.	Has to have everything own way	T	34.3	56.3	25.5	20.0	8.48	.037
38.	Works well alone	F*	40.0	62.5	31.9	38.0	4.73	ns
39.	When angry, will refuse to speak to anyone	T*	54.3	56.3	38.3	30.6	6.38	ns
40.	School performance is far below capabilities	T	38.2	62.5	23.4	24.0	10.61	.014
41.	Has no friends	T	11.4	18.8	14.9	12.0	0.68	ns
42.	Behind at least one school grade due to academic difficulties	T	60.0	87.5	72.3	46.0	12.06	.007
43.	Seems dull; slow to catch on	T	31.4	43.8	31.9	34.7	0.88	ns
44.	Will not ask questions, even when unsure as to how to do the work	T	31.4	37.5	27.7	26.0	0.92	ns
45.	Fights back if another child has been asking for it	T	88.6	87.5	76.6	82.0	2.31	ns
46.	Never seems to be still for a moment	T	40.0	31.3	19.1	18.0	6.70	ns
47.	Argues with me	T	60.0	68.8	38.3	30.0	12.22	.007

T A B L E - 6 (Continued)

	Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
48.	Is able to concentrate on things	F*	42.9	42.9	34.0	40.0	0.81	ns
49.	Boasts of own toughness	T	40.0	37.5	19.1	22.0	6.00	ns
50.	Seems to think of self as worthless	T	11.4	12.5	16.7	8.0	1.87	ns
51.	Tries to be center of attention	T	54.3	68.8	23.4	30.0	15.99	.001
52.	"Drags feet" when requested to do something	T	31.4	75.0	17.0	44.0	19.66	.0002
53.	Accepts adult suggestions	F*	28.6	37.5	17.0	22.0	3.39	ns
54.	Sulks when things go wrong	T	68.6	81.3	57.4	54.0	4.89	ns
55.	Becomes frightened easily	T	11.4	37.5	23.4	14.0	6.29	ns
56.	Resents even the most gentle criticism of work	T	25.7	56.3	14.9	24.0	10.93	.012
57.	Distractible; can't concentrate	T	71.4	68.8	48.9	40.0	10.07	.018
58.	Able to see the bright side of things	F*	26.5	68.8	21.3	24.5	14.29	.003
59.	Fights with smaller children	T	32.4	37.5	14.9	8.3	11.41	.01
60.	Spelling performance at least one grade level below age expectation	T	62.9	81.3	87.2	62.0	10.08	.018
61.	Fearful of being hurt at play	T	11.4	18.8	21.3	8.0	4.00	ns
62.	Is stubborn	T	77.1	81.3	53.2	40.0	15.84	.001
63.	Never speaks up even when there is cause to be angry	T	2.9	12.5	10.6	10.0	2.10	ns
64.	Is interested in schoolwork	F*	31.4	37.5	23.9	32.0	1.37	ns
65.	Tries to get other children into trouble	T	45.7	25.0	27.7	24.0	5.23	ns
66.	Does things just to attract attention	T	54.3	56.3	31.9	30.0	8.12	.044

TABLE - 6 (Continued)

	Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
67.	Never fights back, even if someone hits or pushes first	T	2.9	6.3	12.8	4.0	4.15	ns
68.	Prefers to be around adults, rather than play with children	T	8.6	25.0	12.8	4.0	6.40	ns
69.	Is popular with his classmates	F*	60.0	68.8	31.9	24.0	17.98	.0004
70.	Does things which are normal for children much younger	T	51.4	75.0	40.4	24.0	15.17	.002
71.	Never sticks up for self when picked on by other children	T	0.0	12.5	14.9	4.0	8.07	.045
72.	Threatens to hurt other children when angry	T	54.3	68.8	28.3	26.0	15.25	.002
73.	Average or above I.Q. (Intelligence Quotient)	F*	35.5	60.0	50.0	34.8	4.63	ns
74.	Does not take orders when other children are in charge	T	37.1	68.8	28.3	16.3	16.42	.001
75.	Prefers to be alone and play alone	T*	11.4	31.3	14.9	10.2	4.67	ns
76.	Finishes classroom assignments	F*	31.4	50.0	27.7	26.0	3.55	ns
77.	Gives other children dirty looks	T	80.0	56.3	34.0	36.0	21.35	.0001
78.	Deliberately interrupts what is going on by asking silly questions	T	25.7	25.0	10.6	18.0	3.62	ns
79.	Slow in making friends	T	31.4	56.3	25.5	32.0	5.18	ns
80.	Seems as happy as most children	F*	40.0	56.3	17.0	14.0	17.02	.0007
81.	Finds fault with instructions given by adults	T	25.7	43.8	12.8	12.0	10.21	.017
82.	Seems unconcerned when misbehaving	T	40.0	56.3	27.7	32.0	4.86	ns
83.	Cries easily	T	20.0	37.5	40.4	20.0	6.95	ns

TABLE - 6 (Continued)

	Item	Scored Direction	Group 1 EB Only	Group 2 EB plus Other	Group 3 Other Only	Group 4 None	x^2	p
84.	Is afraid of strange adults	T	0.0	6.3	8.5	8.0	3.08	ns
85.	Is self-confident	F*	62.9	46.7	46.8	32.0	7.97	.047
86.	When angry, will do things like slamming the door or banging on the desk	T	71.4	62.5	42.6	34.0	13.49	.004
87.	Acts in a "dare-devil", fearless manner	T	28.6	43.8	19.1	10.0	9.96	.019
88.	Has difficulty speaking clearly when excited or upset	T	38.7	53.3	43.2	27.7	4.14	ns
89.	Has a "chip on shoulder"	T*	37.1	31.3	10.9	10.0	13.63	.004
90.	Becomes embarrassed easily	T	28.6	37.5	29.8	51.0	6.21	ns
91.	Bright, but doesn't apply self (underachiever)	T	45.7	37.5	17.0	24.0	9.28	.026
92.	Disturbs other children with boisterous behavior	T	48.6	56.3	17.0	22.0	16.16	.001
93.	Behind at least two school grades due to academic difficulties	T	51.4	93.8	59.6	32.0	20.27	.0002
94.	Arithmetic skill at least one grade level below age expectation	T	70.6	68.8	85.1	47.9	15.21	.002
95.	Much anxiety -- afraid of such things as storms, school, death, injury, war (considered phobic)	T	5.7	31.3	10.6	8.0	8.29	.04
96.	Frequent headaches, stomach aches, or other nonspecific physical complaints	T	8.6	12.5	14.9	4.0	3.57	ns

Conclusions

This study demonstrates that the reporting of hearing impaired children as emotionally/behaviorally disturbed on the Annual Survey of Hearing Impaired Children and Youth has a clear relationship with the SBCL scales LNA, AGG, HI, and TD. The SBCL behavior profile of children labeled as emotionally/behaviorally disturbed characterizes them as educationally unmotivated, physically aggressive toward peers, disruptive in the classroom, and withdrawn from others.

Further, hearing impaired children who have other handicapping conditions are characterized as withdrawn, anxious, and as having exceptional difficulty with academic achievement. When the label of emotionally/behaviorally disturbed is added to this profile, the emotionally disturbed plus additional handicapping conditions group (Group 2) is depicted as the most severely disturbed group. From this finding, it appears that the behavioral effects of other handicapping conditions, while clearly atypical, are clearly different from the effects of emotional/behavioral disturbances on classroom behavior, so that the two influences operate independently and additively.

In general, even those hearing impaired children who were reported to have no additional handicapping conditions beyond the hearing loss received significantly higher scores on almost all SBCL scales than did the normally hearing children in Miller's normative sample. Whereas in Miller's study only 1% of the children received a T-score (standardized score) of 70 or above on any scale, the proportions of hearing impaired children receiving such scores ranged from 2% to 69%, as can be seen in Table 7. For the "normal" (i.e., reported as having no additional handicaps) group of hearing impaired children, 22% received a T-score of 70 or greater on the composite "total disability" scale. This set of findings clearly supports those of others reported earlier in this paper in showing that hearing impaired children have significantly higher rates of emotional/behavioral disturbances than do their hearing peers.

This study, as well as that of Schlesinger & Meadow (1972), and that of Vernon (1969), involved children in residential schools for the deaf. To what extent these findings would be typical of hearing impaired children in other educational settings remains an open question deserving further study.

TABLE - 7

Percentage of Students with T≥70

Group	LNA	AGG	ANX	AD	HI	EXT	TD
#1, EB only	6	54	0	12	0	9	43
#2, EB plus other	6	69	19	38	0	6	63
#3, Other only	2	23	11	23	0	9	13
#4, No additional handicaps	12	28	2	18	0	8	22
Normally hearing children (Miller's normative sample)	1	1	1	1	1	1	1

Other areas in which further investigation is needed include more detailed examination of the patterns of behavior which may be related to specific causes of deafness, to specific sets of teacher behaviors, and to specific family backgrounds such as those with deaf parents and/or deaf siblings. Examinations of the behavioral similarities and differences between hearing and deaf children who are labeled emotionally disturbed should be of great benefit in shaping treatment approaches.

Taking a broader view, the entire area of service to emotionally disturbed hearing impaired children requires substantial development of treatment, training, and research programs. The value of various methods of assessment, the relative effectiveness of various treatment approaches with various kinds of children, and the patterns and levels of training which produce personnel most suited to providing educational and treatment services for these children, are all areas in which large investments of time, energy, and money need to be made if we are ever to do better than our present status of serving adequately perhaps 10% of the children in need.

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